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ABSTRACT

This paper presents findings of a study that examined the influence of the principal's leadership style on school climate and student achievement. Three survey instruments--the Leadership Behavioral Matrix, the Tennessee School Climate Inventory, and the Group Openness and Trust Scale--were administered to 20 principals and 506 teachers in 20 Kentucky elementary schools. The achievement scores (the California Test of Basic Skills) of 2,834 third- and fifth-graders in the 20 schools were also analyzed. Using analysis of variance procedures, comparisons between school climate and leadership style revealed a statistically significant difference between leadership style and the involvement subscale of the school climate instruments. There were no significant differences for any of the other eight subscales of school climate for leadership style, nor were there any significant differences between school achievement and leadership style. Twelve of the principals, however, used a "promoter" leadership style, which involved meeting people's needs and involving parents and community in decision making. A conclusion is that schools with higher levels of parent/community involvement and principals with "promoter" styles may enhance their students' achievement. Seven tables and appendices containing three data matrices are included. Contains 38 references. (LMI)

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THE INFLUENCE OF THE PRINCIPAL'S LEADERSHIP STYLE ON SCHOOL CLIMATE AND STUDENT ACHIEVEMENT

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ABSTRACT

This study examines the influence of the principal's leadership style on school climate and student achievement. The Leadership Behavioral Matrix, the Tennessee School Climate Inventory, and the Group Openness and Trust Scale and were administered to principals and teachers in twenty elementary schools. School achievement scores were obtained from the results of the California Test of Basic Skills administered by the district in grades 3 and 5 in the twenty schools. Using analysis of variance procedures, comparisons between school climate and leadership style revealed a statistically significant difference between leadership style and the involvement subscale of the school climate instruments. There were no significant differences for any of the other eight subscales of school climate for leadership style, nor were there any significant differences between school achievement by leadership style.

The investigation reported here examined the influence of the principal's leadership style on school climate and student achievement. Some research has focused separately on the relationships between leadership and school climate, school climate and achievement, and leadership and achievement. No research has been found which was directed toward the influence of these two key personal and organizational variables and student achievement. The research reported here seeks, on a modest scale, to begin to remedy that situation.

On the one hand, the relationship between leadership style and student achievement is inconsistent. Valesky et al. (1992) found that a democratic leadership style produced a better school climate than an authoritarian or laissez-faire leadership style did, using a sample of seven inner city, high schools in Memphis, Tennessee. Cey (1993) found a strong, positive relationship between the principal's leadership style and organizational climate in twenty secondary schools in Michigan. Haymon (1990) found a positive relationship between school climate and leadership style with a sample of elementary schools. Bulach et al. (1992) found a positive correlation ($r = .85$) between the leadership subscale score of the Tennessee School Climate Inventory (TSCI) and the overall climate score on the TSCI.

On the other hand, the research of Decker (1993) found no relationship between leadership style and school climate in 80 elementary schools in Iowa. Moreover, Anderson (1993) found no relationship between leadership style and

school climate using a sample of fifty-seven urban, suburban, and rural schools in New Jersey. Similar results were found by Nichols (1993) in an urban school district. Based on the aforementioned research, the relationship between leadership styles and school climate is inconclusive.

Likewise, common findings in studies of the relationship between school climate and student achievement are few and fragile; nevertheless, some agreement does exist: Climate does affect many student outcomes, including cognitive behavior (Barker, 1963; Brookover et al., 1978; Duke & Perry, 1978; Lunenburg & Ornstein, 1991; Lunenburg, in press).

Some researchers have found a relationship between various school climate factors and student achievement. Brookover et al. (1979) found that school climate accounts for a significant amount of the variance in student achievement, with race and socio-economic status (SES) controlled. McDill & Rigsby (1973) came to similar conclusions. Edmonds and Fredericksen (1978) reported that SES composition alone does not explain achievement differences, which are related to teacher attitudes, instructional programs, parent involvement, student attendance, and expectations. The Phi Delta Kappa study (1980), Weber (1971), Klitgaard & Hall (1973a, b), Rutter et al. (1979), and Wynne (1980) reported similar findings. Lezotte and Passalacqua (1978) found that school building accounts for significant variance in achievement beyond the influence of prior achievement.

Several researchers studied the relationship between organizational climate

and student achievement, using a variety of climate instruments. Andrews (1965) found a relationship between school achievement and particular dimensions of organizational climate but not to overall climate type. Other researchers reported similar findings (Feldvebel, 1964; Hale, 1965; Maxwell, 1967). Miller (1968) found a relationship between overall climate type and school achievement. In two recent studies, Linzy (1990) and Bulach et al. (1992) found a significant relationship between climate and achievement.

With respect to the relationship between leadership and student achievement, the findings are inconsistent. Brookover and Lezotte (1979) found that high-achieving schools are characterized by high evaluations and expectations, academic time allocation, accountability, satisfied teachers, parent interest, limited use of special programs, and principal leadership. Ellett and Walberg (1979) reported that principal performance affects student achievement through the mediating influence of school climate. Wesner (1993) in investigating a middle school improvement project found that principal leadership as mediated by school climate corresponded to an improvement in student achievement. Secumski-Kiligian (1993) found no relationship between leadership style and student achievement. Similar results were reported by Hardie (1993) and Willard (1993).

The purpose of the present study was to investigate the influence of the principal's leadership style on school climate and student achievement. It would be a significant discovery if it could be shown that one style of leadership results in

a better school climate and higher student achievement than another style. Knowledge of which style is best would allow school leaders to modify their existing style in order to improve school climate and student achievement.

PROCEDURES

Instruments

The measurement instruments selected were those frequently used in previous research to operationally define the constructs investigated in this study. An attempt was made to select those instruments with demonstrated psychometric properties. The Leadership Behavioral Matrix (Northwest Regional Educational Laboratory, 1978) operationally defines leadership style. School climate was operationally defined by the Tennessee School Climate Inventory (Butler & Alberg, 1991) and the Group Openness and Trust Scale (Bulach, 1993). Student achievement was operationally defined as the Normal Curve Equivalent (NCE) scores for a school building on the California Test of Basic Skills (CTBS).

Leadership Style. The Leadership Behavioral Matrix was used to measure the leadership style of principals. The twenty-six item, Likert-type instrument measures behavior patterns that operate on a vertical continuum of informal and formal and on a horizontal dimension of dominant and easy going. The intersection of these opposites forms four quadrants which represent four categories of behavior style: promoter, supporter, controller, and analyzer.

Promoters get involved with people in active, rapidly changing situations. They are seen as socially outgoing and friendly, imaginative and vigorous. *Supporters* value interpersonal relations. They try to minimize conflict and promote the happiness of everyone. *Controllers* want results. They like to run things and have the job done in their own way. These people manage their time to the minute. *Analyzers* are problem solvers. They like to get all the data before making a decision. These people are frequently quiet and like to work alone.

The overall test-retest reliability for the Leadership Behavioral Matrix (LBM) is .86. Validity of the LBM was supported by the "method of known groups" (Northwest Regional Educational Laboratory, 1978). That is, individual LBM scores were correlated with behavioral ratings made independently by persons who knew the individual well, such as colleagues.

These four categories of leadership style (promoter, supporter, controller, analyzer) provided the conceptual basis for the study of principal's leadership styles in this research.

School Climate. The Tennessee School Climate Inventory (Butler & Alberg, 1991) and the Group Openness and Trust Scale (Bulach, 1993) were used to measure school climate. The Tennessee School Climate Inventory contains sixty Likert-type items that are assigned to seven subtests delineated by factor-analytic methods: order, leadership, environment, involvement, instruction, expectations, and collaboration. A brief definition of each subtest follows.

Order is the extent to which the environment is ordered and appropriate behaviors are present. *Leadership* is the extent to which the administration provides instructional leadership. *Environment* is the extent to which a positive learning atmosphere exists. *Involvement* is the extent to which parents and the community are involved in the school. *Instruction* is the extent to which the instructional program is developed and implemented. *Expectations* is the extent to which students are expected to learn and be responsible. *Collaboration* is the extent to which the administration, faculty, and students cooperate and participate in problem solving.

Internal consistency of the Tennessee School Climate Inventory (TSCI) was estimated by Cronbach's alpha. Data on the test-retest reliability ranged from .54 to .88 for the seven dimensions of the TSCI and were significant beyond the .01 level (Butler & Alber, 1991).

The Group Openness and Trust Scale (GOTS) consists of twenty-five Likert-type items that are clustered into two factors delineated through factor-analytic methods: trust and openness. A brief description of each dimension follows.

Group trust is an interpersonal condition that exists between people when interpersonal relationships are characterized by an assured reliance or confident dependence on the character, ability, truthfulness, confidentiality, and predictability of others in the group. *Group openness* is an interpersonal condition that exists between people when: (1) facts, ideas, values, beliefs, and feelings are readily

transmitted; and (2) the recipient of a transmission is receptive or willing to listen to that transmission.

Substantial evidence as to the validity of GOTS has been reported. Alpha coefficients of .91 for the total scale and for the trust and openness factors respectively (.89 and .77) supported their moderately high reliability. The overall corrected split-half reliability coefficient for the GOTS is .89. For the factors, reliability coefficients range from .79 to .81 for the trust factor and .72 to .80 for the openness factor (Bulach, 1993).

The nine dimensions of school climate, which consist of the seven subtests from the Tennessee School Climate Inventory and the two factors from the Group Openness and Trust Scale, provided the conceptual basis for the study of school climate in this research.

Student Achievement. School achievement scores were obtained from the results of the California Test of Basic Skills (CTBS) administered by the district in grades three and five in twenty elementary schools.

Sample

The sample for the study consisted of 2,834 third and fifth grade students, 506 teachers, and 20 principals in twenty elementary schools in Kentucky. Although the school sample was not random, it was diverse and distributed among urban, suburban, and rural areas and spanned the entire range of socioeconomic status. Schools ranged in size from 93 to over 700 students. Furthermore, the sample

represented a group of educators diverse in age, race, gender, experience, and educational level. The student sample was also diverse in grade level, racial composition, gender, and socioeconomic status.

RESULTS

With respect to the influence of leadership styles on school climate, no statistically significant differences were found in school climate as a result of principal leadership styles ($F = 2.28$, $p > .05$). Twelve of the principals were categorized as promoters; three were categorized as controllers; three were categorized as analyzers; and two were categorized as supporters. The data are summarized in Table 1.

TABLE 1 HERE

The school climate scores ranged from a low of 18.24 to 28.48. The following scale can be used to interpret the school climate scores:

- Scores below 10 indicate complete disagreement that a good school climate exists.
- Scores of 11-17 indicate disagreement that a good school climate

exists.

- Scores of 18-24 indicate that sometimes it exists and sometimes it does not.
- Scores of 25-31 indicate agreement that it exists.
- Scores of 32-35 indicate complete agreement that it exists.

In addition, analysis of variance was computed on the people versus task dimension for those principals who were categorized in the top half of the matrix and those who were categorized in bottom half of the matrix (see appendix A). Those in the top half would have a stronger orientation towards meeting the needs of people while those in the bottom half would have a stronger orientation towards task or meeting the needs of the organization. Twelve of the principals were categorized as people oriented and informal, and six were categorized as task oriented and formal (see Table 2). An F ratio was computed which was found to be 0.017. This was not statistically significant. Consequently, there was no significant difference in climate scores as a result of a people or task orientation of the principals.

TABLE 2 HERE

A third analysis of variance was computed on the introvert verses extrovert dimension for those principals who were categorized on the right side (introvert) of the matrix and those who were categorized in the left side (extrovert) of the matrix (see appendix A). Those on the left side would tend to be more outgoing and dominating, while those on the right side would tend to be more easy going and reserved. Fifteen of the principals were categorized as outgoing and dominating, and five were categorized as easy going and reserved. An F ratio was computed which was found to be 1.669. This was also not statistically significant. Consequently, there was no significant difference in climate scores on the extrovert verses introvert dimension of a principal's leadership style. (See Table 3).

TABLE 3 HERE

Moreover, analyses of variance were computed on each of the nine subscales and leadership style. The only subscale which had a significant F ratio was the **"involvement"** subscale. With a value of 5.556, it was significant at the .008 level. (See Table 4). Involvement is defined as "the extent to which parents and the community are involved in the school." One other subscale, that is,

leadership, had an F ratio of 2.39 which was almost significant. Leadership is defined as "the extent to which the administration provides instructional leadership." For definitions of the other subscales see Bulach et al. (1992).

TABLE 4 HERE

With respect to the influence of leadership styles on student achievement, no statistically significant differences were found in student achievement as a result of principal leadership styles. The two styles with the highest achievement scores were the analyzer and promoter styles. The data are summarized in Table 5. Only seventeen of the twenty schools returned achievement data.

TABLE 5 HERE

As with the climate data, further analyses using analysis of variance were done to see if there was a significant difference in achievement on the **"people"** versus **"task"** dimension and on the **"introvert"** versus **"extrovert"** dimension. No significant differences were found. The data are reported in Tables 6 and 7.

TABLE 6 HERE

TABLE 7 HERE

DISCUSSION

Failure to find differences in school climate scores as a result of leadership styles is consistent with some previous findings. It could be concluded from this research that school climate does not depend on leadership style, that is, any leadership style could be accompanied by a good school climate. In fact, this is what occurred in this study, although the promoter style had the highest overall climate score. The difference in scores between the different styles was not significant. A review of the school climate scores for the four leadership styles (see Appendix B) revealed that there was a high climate score in each leadership style. (A score of 28 indicates that the staff of the school agreed that a good school climate was present in their building). Three of the leadership styles had a score of 28 or very close to that. One leadership style, that is, the "supporter,"

had the lowest score with a score of 18.24. The "supporter" style also had a relatively high overall score.

One possibility for explaining the lack of any relationship or effect of leadership style on school climate could be the work of Hersey and Blanchard (1988). They theorized that the most effective leadership style depends on the maturity level of the staff. They define maturity in terms of ability, motivation, and experience. The best leadership style for a staff with low ability, motivation, and experience would be a leader who "tells" them what to do. This style would correspond closely to the "controller" style. The best leadership style for a staff with high ability, motivation, and experience would a leader who "delegates". This style would correspond closely to the "supporter" style. The "promoter" style would correspond closely to the type leader which Hersey and Blanchard classify as one who "sells or coaches," because staff has low motivation, but adequate ability.

It is possible that the staffs of the schools being investigated were at different maturity levels, and that the leadership style being used by the principals was the most effective one, thus, resulting in a good school climate. If that were the case and Hersey and Blanchard's theory is correct, any leadership style could result in a good climate because the needs of staff and the organization are being met.

Another interesting finding of this research is the distribution of the principals by leadership style. Twelve of the principals were classified as "promoters," while the remaining eight were spread across the other three styles. The promoter leadership style is characterized as being outgoing, enthusiastic, flexible, dominant, socially skillful and people oriented. This leadership style also has a tendency for some less positive characteristics, for example, afraid of confrontation, inconsistent, childlike, and lacking in conviction.

Regarding the effect of people versus task orientation (Table 2), one would predict that a people orientation would produce higher climate scores, but that did not occur. The data does show that most of the principals had a people orientation with fourteen out of 20 falling in this category. Further, it can be seen that the principals in this study (Table 3) can be further characterized as extrovert instead of introvert with fifteen out of 20 falling into this category. While principals classified as extrovert had higher climate scores than their introvert counterparts, the difference was not significant.

The finding that there are more principals who are classified as extroverts than introverts seems logical, that is, people aspiring to become leaders who are dominant, enthusiastic, quick to act, forceful, impatient, talkative, and socially skillful (extrovert characteristics) are more likely to emerge as leaders than people who are easy-going, passive, quiet, reserved, and modest (introvert characteristics).

The data in Table 4, which shows that the behaviors measured by the involvement subscale vary with the different leadership styles, is also very interesting. The involvement subscale measures parent and community involvement. Promoter-type leaders score higher on this scale than all other types. Apparently, this principal type involves people outside the school more frequently than other leader types in the daily operation of the school. Bulach et al. (1992) also found a significant positive correlation between scores on this subscale with achievement scores. Perhaps there is some kind of interactive effect between leadership style, involvement, and achievement.

Based on the results of this research, it would appear that any leadership style could result in a good school climate. The fact that one leadership style did not emerge as superior to the others for creating a good school climate is believed to be attributable to the maturity level of the staffs. The work of Valesky et al. (1992) appears to support this belief. For example, the staffs of the seven buildings involved in their study were all volunteers. The staffs for each of these buildings were selected prior to the implementation of school based decision making. Since everyone chose to be there, they would be motivated, have ability, and perhaps experience. The appropriate style of leadership would be the democratic style of leadership and this should result in a good school climate. It is suggested that a good climate is dependent on an appropriate match between the leadership style of the principal and the maturity level of the faculty.

There is a strong tendency for the principals in this study to use the promoter style of leadership, which has a strong orientation toward meeting the needs of people and involving parents and the community in the decision making process. This style also has a tendency to be somewhat domineering and outgoing or tending toward extrovertism.

Furthermore, while there are higher achievement scores under the promoter style of leadership, the differences are not significant. Consequently, any leadership style can also result in high achievement scores.

The most significant finding of this research was the difference in leadership styles for those schools with higher levels of student, parent, and community involvement. While it may be too early to make definite conclusions about the importance of this variable for leadership style and student achievement, this research and previous research highlight its importance. It is quite possible that principals who use a promoter style of leadership and involve students, parents, and community in the decision-making process may have higher student achievement.

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Table 1

Summary Data and Analysis of Variance Data for Comparisons Among Leadership Styles on School Climate

Leadership Style	N	Climate Scores	Standard Deviation
Promoter	12	26.511	1.799
Controller	3	25.120	2.400
Analyzer	3	26.270	0.981
Supporter	2	21.985	2.400

Source	df	SS	MS	F
Between Groups	3	37.218	12.406	2.280
Within Groups	16	87.048	5.411	

Table 2

Summary Data and Analysis of Variance Data for Comparisons Between People Oriented Versus Task Oriented Leaders on School Climate

Leadership Style	N	Climate Scores	Standard Deviation
People oriented	14	25.864	2.699
Task oriented	6	25.697	1.919

Source	df	SS	MS	F
Between Groups	1	0.118	0.118	0.017
Within Groups	18	124.092	6.894	

Table 3

Summary Data and Analysis of Variance Data for Comparisons Between Extrovert Versus Introvert Leaders on School Climate

Leadership Style	N	Climate Scores	Standard Deviation
Extrovert	15	26.233	2.013
Introvert	5	24.556	3.255

Source	df	SS	MS	F
Between Groups	1	10.542	10.542	1.669
Within Groups	18	113.724	6.318	

Table 4

Summary Data and Analysis of Variance Data for Comparisons Among Leadership Styles on the Involvement Subscale of the TSCI

Leadership Style	N	Involvement Scores	Standard Deviation
Promoter	12	27.425	2.258
Controller	3	24.233	1.960
Analyzer	3	26.667	1.297
Supporter	2	21.150	1.960

Source	df	SS	MS	F
Between Groups	3	81.269	27.090	5.56
Within Groups	16	77.821	4.864	

Table 5

Summary Data and Analysis of Variance Data for Comparisons Among Leadership Styles on Student Achievement

Leadership Style	N*	Achievement	Standard Deviation
Promoter	10	60.778	5.051
Controller	2	55.300	1.800
Analyzer	3	65.633	3.646
Supporter	2	52.450	5.450

Source	df	SS	MS	F
Between Groups	3	258.810	86.270	3.087
Within Groups	13	335.347	27.946	

*Only seventeen of the participating twenty schools returned their achievement data.

Table 6

Summary Data and Analysis of Variance Data for Comparisons Between People Oriented Versus Task Oriented Leaders on Student Achievement

Leadership Style	N	Achievement	Standard Deviation
People oriented	11	59.78	5.09
Task oriented	5	60.36	7.85

Source	df	SS	MS	F
Between Groups	1	1.15	1.15	0.03
Within Groups	15	593.01	42.36	

Table 7

Summary Data and Analysis of Variance Data for Comparisons Between Extrovert Versus Introvert Leaders on School Achievement

Leadership Style	N	Achievement	Standard Deviation
Extrovert	12	59.43	5.82
Introvert	5	61.50	5.91

Source	df	SS	MS	F
Between Groups	1	15.08	15.08	0.39
Within Groups	15	580.77	38.72	

APPENDIX A

LEADERSHIP STYLE MATRIX

PEOPLE ORIENTED
INFORMAL

PROMOTER — SUPPORTER

DOMINANT — EASY GOING

EXTROVERT — INTROVERT

CONTROLLER — ANALYZER

TASK ORIENTED
FORMAL

APPENDIX B

CLIMATE DATA BY LEADERSHIP STYLE

PROMOTER CONTROLLER	SUPPORTER	ANALYZER	
28.48	25.73	27.65	28.48
28.44	18.24	25.70	23.86
28.06		25.46	23.02
27.70			
27.27			
27.26			
27.25			
26.23			
25.98			
24.74			
24.45			
22.27			

APPENDIX C

**ACHIEVEMENT DATA (NCE SCORES)
BY LEADERSHIP STYLE**

PROMOTER CONTROLLER	SUPPORTER	ANALYZER	
73.6	57.1	70.3	57.9
62.3	53.5	65.2	47.0
61.8		61.4	
60.7			
60.5			
58.2			
57.5			
57.3			
55.1			